# ST 3100
# Satellite Telecommunication System
# Users Manual

AirCell Part Number: 810-10680 • Revision G • May 2005

(Browse www.aircell.com for online manuals with the latest revisions)

## Important Telephone Numbers

AirCell Customer Service **AIR1** (2471) Toll-free
001.303.379.0278

## AirCell Customer Service Hours of Operation

Monday through Friday, 0730 (7:30 am) to 1700 (5:00 pm)
USA Mountain Time

Aircraft Registration _____

Aircraft Make/Model _____

Aircraft Serial Number _____

## Iridium Satellite Network Telephone Number for this Aircraft

Number _____

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# 1 General Information

## Safety Information

For the safe and efficient use of your AirCell ST 3100 Iridium Network telephone, please note the following information.

Your AirCell Iridium phone is a mobile transmitter and receiver. When using your phone, the antenna mounted on the outside of the aircraft transmits and receives radio frequency (RF) energy.

## Other Electronic Equipment

Most modern electronic equipment, including personal medical devices (pacemakers, hearing aids, etc.) or equipment in hospitals and cars are shielded from RF energy. However, RF energy from radio telephones may affect some electronic equipment.

## ST 3100 Iridium-based Telecommunication System

The ST 3100 telephone accesses the Iridium Satellite Network of 66 Low-Earth Orbit (LEO) satellites and operates in the frequency range of 1616 MHz to 1625.5 MHz. When you use your telephone, the system controls the power level at which your phone transmits. The maximum power level of ST 3100 transmissions is seven watts.

## Features

These are a few of your phone system's features:

- Digital Display
- Last Number Redial
- Data Calls
- Handset-to-Handset Intercom

## Telephone Overview

**01** – Displays the telephone number being dialed or the system status.

**02** – Dot in lower left corner displays when the phone is on.

**03** – **IN USE** displays when the phone is in use.

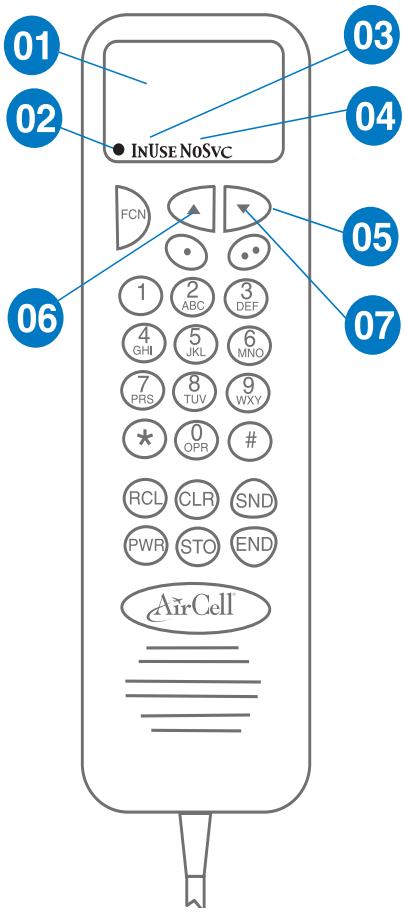
**04** – **NoSvc** displays when the phone is not registered or service is unavailable.

**05** – Volume keys adjust ear piece volume.

**06** – Scrolls up/Volume up.

**07** – Scrolls down/ Volume down.

***Note:*** *For information on using the unique features of a cordless handset, please refer to the Cordless Handset Supplement (P/N 811-10590-001).*




## Emergency and Toll-Free Numbers

The Iridium Satellite Network System for aeronautical use does not currently support Emergency 911 calls.

Toll-free numbers, such as 800, 877, and 888 numbers, may not work for Iridium or international calls.

# 2 Quickstart Calling Guide

## Calling *from* the Aircraft

When calling from the aircraft, after dialing press SND.

### Calls to USA/Canada

Dial 1 + Area Code + Telephone Number.

***Note:*** *On older phones up to Revision C, dial 00 + 1 + Area Code + Telephone Number.*

### Calls to Outside USA/Canada

Dial 00 (Iridium International Direct Dial access code prefix) + Country Code (USA/Canada = 1) + Telephone Number.

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## Making Two-Stage Calls *to* Aircraft from Ground Phones

Two-stage dialing may be a less-costly alternative to direct dialing.

### Calls from USA/Canada

Dial 1 + 480.768.2500 (listen for prompt) +
Aircraft Iridium Telephone Number (8816.XXX.XXXXX).

### Calls from Outside USA/Canada

Dial IDD prefix of the country you are calling from +
1 (USA Country Code) + 480.768.2500 (listen for prompt) +
Aircraft Iridium Telephone Number (8816.XXX.XXXXX).

## Direct Dialing *to* the Aircraft from Ground Phones

Dial IDD prefix of the country you are calling from
(USA/Canada = 011) + Aircraft Iridium Telephone Number
(8816.XXX.XXXXX).

***Note:*** *Cellular or ground phones require international dialing capability. Some cellular and long-distance providers may not recognize the 8816 Iridium Country Code.*

# 3 Basic Operation

## Turning Power On

Your phone has power anytime the aircraft's main avionics power switch is on. During initial power up, a small dot (•) appears in the display's lower left corner; the dot and the word **IRIDIUM** remain as long as the phone has power. During power up, the words **NoSvc** appear briefly in the display's bottom center. You cannot place a call until the **NoSvc** indicator turns off.

***Note:*** *You can only turn power off using the main avionics power switch or the phone's circuit breaker – not by using the handset.*

## Placing Calls

**To place a call:**

1) With the power on and **NoSvc** indicator off, dial:
   - USA/Canada: Dial 1 + Area Code + Number.

   ***Note:*** *On phones up to Revision C, dial 00 before the 1.*
   - International Calls: Dial 00 + Country Code + Number.
2) Press the SND key.
3) When a call has been placed, an **InUse** message appears on the display at lower left. The **InUse** message remains until the phone call is ended by pressing the END key.

   ***Note:*** *You may hear up to five beeps in the 10–12 seconds while your call is being connected.*

## Redialing

To automatically redial the last number called, press the SND key. The last number is redialed, but without appearing on the display.

## Receiving Calls

When your telephone rings, pick up the handset and press the SND key to answer the phone.

## Ending Calls

Always press the END key to end your current call.

## Placing Calls *to* the Aircraft from the Ground

Placing a call to an AirCell ST 3100-equipped aircraft through the Iridium Network is quick and easy. You can either dial direct, or use two-stage dialing, which may be a less-expensive alternative.

### Two-Stage Dialing *to* the Aircraft from the Ground

Two-stage dialing may be the most cost-effective method of calling an AirCell ST 3100-equipped aircraft. Using this method, the calling party is charged by their long distance provider for a call to Tempe, Arizona, USA for the call's duration. The called party (in the aircraft) is charged AirCell per minute charges, from the time the call connects in Tempe, until the call is ended.

**To use two-stage dialing:**

1) Dial the Iridium Call Routing Center:
   - USA/Canada: Dial 1.480.768.2500.
   - Outside USA/Canada: Dial 00** (IDD access code prefix) + 1 (USA Country Code) + 480.768.2500.

2) When prompted, dial the 8816 (Iridium Country Code) + XXX.XXXXX (Iridium Network Number you are calling).

The call is routed to the aircraft. If the system is registered on the network, the phone will ring in 4–6 seconds.

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### Direct Dialing the Aircraft *from* the Ground

When direct dialing an Iridium-equipped aircraft, there may be a pause of up to 25 seconds as the system completes your call.

**To use direct dialing:**

- USA/Canada: Dial 011 (IDD) + 8816 (Iridium Country Code) + XXX.XXXXX (Iridium Network Number).
- Outside USA/Canada: Dial 00** (IDD access code prefix) + 8816 (Iridium Country Code) + XXX.XXXXX (Iridium Network Number you are calling).

## Learning Basics Before Calling

All calls using the Iridium Satellite Network are considered international calls. When calling Iridium-equipped aircraft, always use the 8816 Iridium Country Code.

Direct-dialed calls to an AirCell ST 3100 phone are billed by long distance providers as international calls. Since rates vary greatly, check rates before making calls. Or use two-stage dialing, which may be more cost effective.

Some long distance providers do not recognize the 8816 Iridium Country Code. Two-stage dialing does recognize the Iridium Country Code.

In the procedures, 00** represents the International Direct Dial (IDD) access code prefix of the country you are calling from. In many countries, the IDD code is 00.

See the Appendix for a list of International Direct Dial (IDD) access code prefixes, as well as Country Codes. For a more current list, refer to Internet sites such as www.iridium.com/customer.

## Placing Calls *to* Another Iridium Phone

To place a call from one Iridium phone to another, dial 00 + 8816 + XXX.XXXXX (other subscriber's Iridium Network Number).

## Using Operator-Assisted Calling

The Iridium Network does not support operator-assisted calling.

## Using Directory Assistance

The Iridium Network does not support Directory Assistance.

## Placing Data Calls

Please call AirCell Customer Service, or visit the AirCell Web site, for the latest instructions and supported equipment for using personal computers over the Iridium Network.

For AirCell Customer Service, dial AIR 1 (2471) toll-free or 001.303.379.0278. Call Monday through Friday from 0730 to 1700, USA Mountain Time.

## Using Phones as an Intercom

Two or more AirCell handsets can be used as an intercom; just pick up the handsets and talk. Some custom installations install a remote intercom alert switch to signal another handset location. The alert may consist of either a light, a ringer, or both. Once alerted, use the handset for an intercom conversation within the aircraft.

## Understanding Phone Error Messages

If the **ERROR43** message displays after attempting to dial, the cause is either:

- Dialing a number when **NoSvc** (No Service) is displayed.
- Dialing an improper sequence, such as an invalid number.

## Resetting the Phone

In the event that the phone becomes inoperative, for example with the display indicating **ERRIO4**, reset the phone's circuit breaker from the cockpit.

# 4 Volume Settings

## Displaying the Volume Meter

The phone's volume meter shows the current volume setting. The current setting displays whenever you adjust the volume by pressing the ◁ or ▷ keys. The volume level displays as a bar graph after the letter **V** on the display's left side. Each additional bar indicates a higher volume setting, up to a maximum of six.

## Changing Ear Piece Volume

You can change the ear piece volume during a call, or whenever the handset is out of the cradle. Increase or decrease the volume by pressing and holding the ◁ or ▷ keys. The maximum setting is six bars.

# A Appendix

## International Direct Dial Prefixes and Country Codes

To make a call, dial IDD Prefix + Country Code + Phone Number.

***Note:*** *At International Direct Dial Prefix access code, wait for second tone.*

| Location | Country Code | IDD Prefix |
|---|---|---|
| AFGHANISTAN | 93 | 00 |
| ALBANIA | 355 | 00 |
| ALGERIA | 213 | 00~ |
| AMERICAN SAMOA | 684 | 00 |
| ANDORRA | 376 | 00 |
| ANGOLA | 244 | 00 |
| ANGUILLA | 264* | 011 |
| ANTARCTICA | 672 | |
| ANTIGUA | 268* | 011 |
| ARGENTINA | 54 | 00 |
| ARMENIA | 374 | 8~10 |
| ARUBA | 297 | 00 |
| ASCENSION ISL. | 247 | 01 |
| AUSTRALIA | 61 | 0011 |
| AUSTRIA | 43 | 00 |
| AZERBAIJAN | 994 | 8~10 |
| BAHAMAS | 242* | 001 |
| BAHRAIN | 973 | 0 |
| BANGLADESH | 880 | 00 |
| BARBADOS | 246* | 011 |
| BARBUDA | 268* | 011 |
| BELARUS | 375 | 8~10 |
| BELGIUM | 32 | 00 |
| BELIZE | 501 | 00 |
| BENIN | 229 | 00 |
| BERMUDA | 441* | 011 |
| BHUTAN | 975 | 00 |
| BOLIVIA | 591 | 00 |
| BOSNIA & HERZOGOVINA | 387 | 00 |
| BOTSWANA | 267 | 00 |
| BRAZIL | 55 | 00 |
| BRITISH VIRGIN ISL. | 284* | 011 |
| BRUNEI | 673 | 00 |
| BULGARIA | 359 | 00 |
| BURKINA FASO | 226 | 00 |
| BURMA (MYANMAR) | 95 | 0 |
| BURUNDI | 257 | 90 |
| CAMBODIA | 855 | 00 |
| CAMEROON | 237 | 00 |
| CANADA | 1 | 011 |
| CAPE VERDE ISL. | 238 | 0 |

| Location | Country Code | IDD Prefix |
|---|---|---|
| CAYMAN ISL. | 345* | 011 |
| CENTRAL AFRICAN REPUBLIC | 236 | 19 |
| CHAD | 235 | 15 |
| CHATHAM ISL., N. ZEAL. | 64 | 00 |
| CHILE | 56 | 00 |
| CHINA (PRC) | 86 | 00 |
| CHRISTMAS ISL. | 672 | 00 |
| COCOS-KEELING ISL. | 61 | 0011 |
| COLOMBIA | 57 | 90 |
| COMOROS | 269 | 10 |
| CONGO | 242 | 00 |
| CONGO, DEM. REP. OF (Former ZAIRE) | 243 | 00 |
| COOK ISL. | 682 | 00 |
| COSTA RICA | 506 | 00 |
| CROATIA | 385 | 00 |
| CUBA | 53 | 119 |
| CUBA (Guantanamo Bay) | 5399 | 00 |
| CYPRUS | 357 | 00 |
| CZECH REPUBLIC | 420 | 00 |
| DENMARK | 45 | 00 |
| DIEGO GARCIA | 246 | 00 |
| DJIBOUTI | 253 | 00 |
| DOMINICA | 767* | 011 |
| DOMINICAN REPUBLIC | 809* | 011 |
| EASTER ISL. | 56 | 00 |
| ECUADOR | 593 | 00 |
| EGYPT | 20 | 00 |
| EL SALVADOR | 503 | 0 |
| EQUATORIAL GUINEA | 240 | 00 |
| ERITREA | 291 | 00 |
| ESTONIA | 372 | 8~00 |
| ETHIOPIA | 251 | 00 |
| FAEROE ISL. | 298 | 009 |
| FALKLAND ISL. | 500 | 0 |
| FIJI ISL. | 679 | 05 |
| FINLAND | 358 | 00,<br>990,<br>994,<br>999 |
| FRANCE | 33 | 00 |

# International Direct Dial Prefixes and Country Codes

To make a call, dial IDD Prefix + Country Code + Phone Number.

| Location | Country Code | IDD Prefix |
|---|---|---|
| FRENCH ANTILLES | 596 | 00 |
| FRENCH GUIANA | 594 | 00 |
| FRENCH POLYNESIA | 689 | 00 |
| GABON | 241 | 00 |
| GAMBIA | 220 | 00 |
| GEORGIA | 995 | 8~10 |
| GERMANY | 49 | 00 |
| GHANA | 233 | 00 |
| GIBRALTAR | 350 | 00 |
| GREECE | 30 | 00 |
| GREENLAND | 299 | 009 |
| GRENADA | 473* | 011 |
| GUADELOUPE | 590 | 00 |
| GUAM | 671* | 011 |
| GUANTANAMO BAY | 5399 | 00 |
| GUATEMALA | 502 | 00 |
| GUINEA-BISSAU | 245 | 00 |
| GUINEA (PRP) | 224 | 00 |
| GUYANA | 592 | 001 |
| HAITI | 509 | 00 |
| HONDURAS | 504 | 00 |
| HONG KONG | 852 | 001 |
| HUNGARY | 36 | 00 |
| ICELAND | 354 | 00 |
| INDIA | 91 | 00 |
| INDONESIA | 62 | 001,008 |
| IRAN | 98 | 00 |
| IRAQ | 964 | 00 |
| IRELAND | 353 | 00 |
| IRIDIUM NETWORK | 8816 | 00 |
| ISRAEL | 972 | |
| *Calling Israel may be illegal in certain locations* | (BEZEQ LTD) | 00 |
| | (GOLDEN LINES) | 012 |
| | (BARAK LTD) | 013 |
| | (BEZEQ LTD) | 014 |
| ITALY | 39 | 00 |
| IVORY COAST | 225 | 00 |
| JAMAICA | 876* | 011 |
| JAPAN | 81 | 001 |
| JORDAN | 962 | 00 |
| KAZAKHSTAN | 7 | 8~10 |
| KENYA | 254 | 000 |
| KIRIBATI | 686 | 00 |
| KOREA (NORTH) | 850 | 00 |
| KOREA (SOUTH) | 82 | 001 |

| Location | Country Code | IDD Prefix |
|---|---|---|
| KUWAIT | 965 | 00 |
| KYRGYZ REPUBLIC | 996 | 8~10 |
| LAOS | 856 | 14 |
| LATVIA | 371 | 00 |
| LEBANON | 961 | 00 |
| LESOTHO | 266 | 00 |
| LIBERIA | 231 | 00 |
| LIBYA | 218 | 00 |
| LIECHTENSTEIN | 41 | 00 |
| LITHUANIA | 370 | 8~10 |
| LUXEMBOURG | 352 | 00 |
| MACAU | 853 | 00 |
| MACEDONIA (Former YUGOSLAV REPUB.) | 389 | 00 |
| MADAGASCAR | 261 | 16 |
| MALAWI | 265 | 101 |
| MALAYSIA | 60 | 00 |
| MALDIVES | 960 | 00 |
| MALI REPUBLIC | 223 | 00 |
| MALTA | 356 | 00 |
| MARSHALL ISL. | 692 | 00 |
| MARTINIQUE | 596 | 00 |
| MAURITANIA | 222 | 00 |
| MAURITIUS | 230 | 00 |
| MAYOTTE ISL. | 269 | 10 |
| MEXICO | 52 | 00 |
| MICRONESIA | 691 | 011 |
| MIDWAY ISL. | 808 | 00 |
| MOLDOVA | 373 | 8~10 |
| MONACO | 377 | 00 |
| MONGOLIA | 976 | 00 |
| MONTSERRAT | 664* | 011 |
| MOROCCO | 212 | 00~ |
| MOZAMBIQUE | 258 | 00 |
| MYANMAR | 95 | 0 |
| NAMIBIA | 264 | 09 |
| NAURU | 674 | 115 |
| NEPAL | 977 | 00 |
| NETHERLANDS | 31 | 00 |
| NETH. ANTILLES | 599 | 00 |
| NEVIS | 869 | 011 |
| NEW CALEDONIA | 687 | 00 |
| NEW ZEALAND | 64 | 00 |
| NICARAGUA | 505 | 00 |
| NIGER | 227 | 00 |

# International Direct Dial Prefixes and Country Codes

To make a call, dial IDD Prefix + Country Code + Phone Number.

| Location | Country Code | IDD Prefix |
|---|---|---|
| NIGERIA | 234 | 009 |
| NIUE | 683 | 00 |
| NORFOLK ISL. | 672 | 00 |
| NORTH KOREA | 850 | 00 |
| NORWAY | 47 | 00 |
| OMAN | 968 | 00 |
| PAKISTAN | 92 | 00 |
| PALAU | 680 | 00 |
| PANAMA | 507 | 0 |
| PAPUA NEW GUINEA | 675 | 05 |
| PARAGUAY | 595 | 00 |
| PERU | 51 | 00 |
| PHILIPPINES | 63 | 00 |
| POLAND | 48 | 0~0 |
| PORTUGAL | 351 | 00 |
| PUERTO RICO | 787* | 1 |
| QATAR | 974 | 0 |
| RÈUNION ISL. | 262 | 00 |
| ROMANIA | 40 | 00 |
| ROTA ISL. | 670 | 011 |
| RUSSIA | 7 | 8~10 |
| RWANDA | 250 | 00 |
| ST. HELENA | 290 | 01 |
| ST. KITTS/NEVIS | 869* | 011 |
| ST. LUCIA | 758* | 011 |
| ST. PIERRE & MIQUELON | 508 | 00 |
| ST. VINCENT & GRENADINES | 809* | 011 |
| SAIPAN ISL. | 670* | 011 |
| SAN MARINO | 378 | 00 |
| SAO TOMÉ & PRINCIPE | 239 | 00 |
| SAUDI ARABIA | 966 | 00 |
| SENEGAL | 221 | 00 |
| SERBIA | 381 | 00 |
| SEYCHELLES ISL. | 248 | 00 |
| SIERRA LEONE | 232 | 00 |
| SINGAPORE | 65 | 001 |
| SLOVAK REPUBLIC | 421 | 00 |
| SLOVENIA | 386 | 00 |
| SOLOMON ISL. | 677 | 00 |
| SOMALIA | 252 | 19 |
| SOUTH AFRICA | 27 | 09, 091 |
| SOUTH KOREA | 82 | 001 |
| SPAIN | 34 | 07~ |
| SRI LANKA | 94 | 00 |
| SUDAN | 249 | 00 |

| Location | Country Code | IDD Prefix |
|---|---|---|
| SURINAME | 597 | 00 |
| SWAZILAND | 268 | 00 |
| SWEDEN | 46 | 009 |
| SWITZERLAND | 41 | 00 |
| SYRIA | 963 | 00 |
| TAIWAN | 886 | 002 |
| TAJIKISTAN | 7 | 8~10 |
| TANZANIA | 255 | 00 |
| THAILAND | 66 | 001 |
| TINIAN ISL. | 670 | 011 |
| TOGO | 228 | 00 |
| TOKELAU | 690 | 00 |
| TONGA ISL. | 676 | 00 |
| TRINIDAD & TOBAGO | 868* | 011 |
| TUNISIA | 216 | 00 |
| TURKEY | 90 | 00 |
| TURKMENISTAN | 993 | 8~10 |
| TURKS & CAICOS ISL. | 649* | 011 |
| TUVALU | 688 | 00 |
| UGANDA | 256 | 00 |
| UKRAINE | 380 | 8~10 |
| UNITED ARAB EMIRATES | 971 | 00 |
| UNITED KINGDOM | 44 | 00 |
| USA | 1 | 011 |
| US VIRGIN ISL. | 1 | 01 |
| URUGUAY | 598 | 00 |
| UZBEKISTAN | 7 | 8~10 |
| VANUATU | 678 | 00 |
| VATICAN CITY | 376 | 00 |
| VENEZUELA | 58 | 00 |
| VIETNAM | 84 | 00 |
| WAKE ISL. | 808 | 00 |
| WALLIS & FUTUNA ISL. | 681 | 19~ |
| WESTERN SAMOA | 685 | 0 |
| YEMEN | 967 | 00 |
| YUGOSLAVIA | 381 | 99 |
| ZAMBIA | 260 | 00 |
| ZIMBABWE | 263 | 00 |

**Notes:**

* USA/Canada: Dial 1 + Code + Phone Number.
Elsewhere: Dial IDD + 1 + Code + Phone Number.

** Dial 95 to dial USA/Canada/Caribbean; country code not needed.

~ Wait for a second tone at this stage.